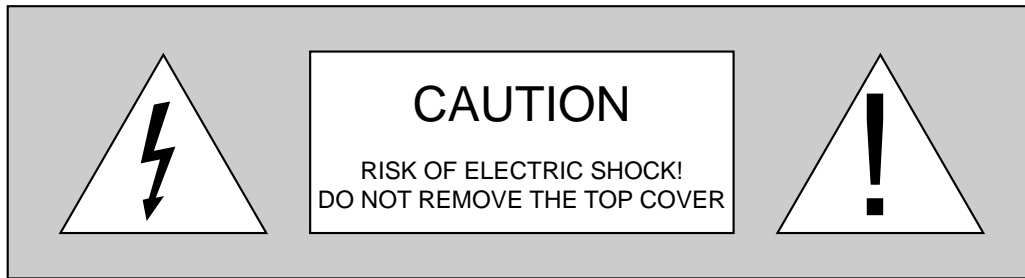


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## 1 WARNINGS



### ATTENTION:

**To reduce the risk of electric shock, disconnect the power supply cable on the rear panel before removing the top cover of the projector.**

**Refer to trained, authorised personnel for technical assistance.**



**ATTENTION:** Prior to switching on the projector please read each chapter of this manual carefully as this manual provides basic instructions for using the projector.

*The installation of the lamp assembly, preliminary adjustments and procedures that necessitate the removal of the top cover, must be carried out by authorised, trained technicians. There are no user serviceable parts inside. To ensure safe and long term reliability please use power cables supplied with the projector. Observe all warnings and cautions.*

### • Federal Communication Commission (F.C.C. Statement)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is used in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### • For the customers in Canada:

This Class B digital apparatus complies with Canadian ICES-003.

### • For the customers in the United Kingdom

**ATTENTION: This apparatus must be earthed**

#### IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Green-and-Yellow: Earth

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  $\equiv$  or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

## 2 PACKAGING AND CONTENTS

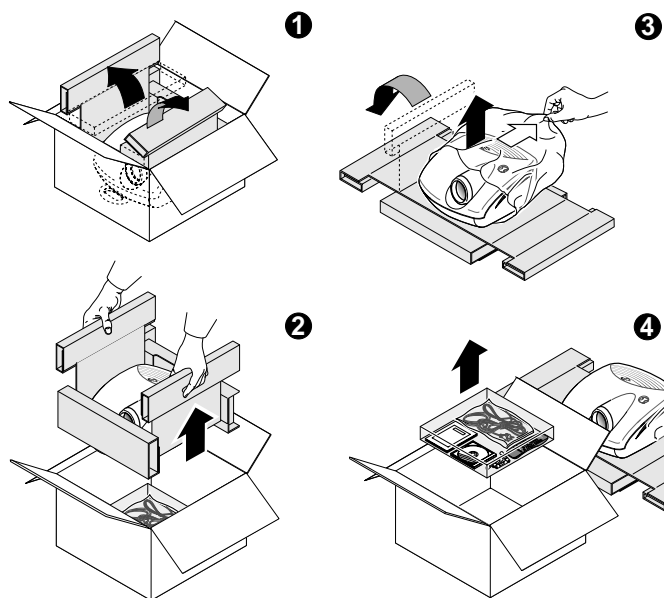


Fig. A

The carton should contain the following: projector remote control, four 1.5V, AAA batteries (for remote control), three power cables (EU, UK, USA) and users manual and CD-ROM.

To unpack the projector safely and easily please follow steps 1 to 6, as per drawing (Fig. A).

It is recommended that the carton and packaging is retained for future use and in the unlikely event that your projector needs to be returned for repair (Fig. B).

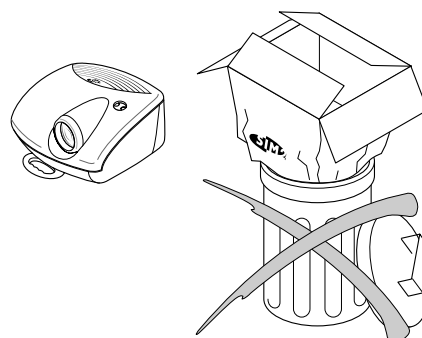


Fig. B

## 3 INTRODUCTION

Congratulations, thank you for choosing the **HT 200/250**, a **STM Multimedia SpA** product (Fig. 1).



Fig. 1

Using the very latest in **DLP™** technology (TI copyright), this projector has been designed specifically for high quality "Home Cinema" applications. The **HT 200/250**'s portability and versatility also means it can be used to display images from PCs for presentations, computer games and Internet.

Sophisticated digital processing and a wide choice of inputs enable the connection of a variety of sources such as DVD players, analogue and digital VCRs, analogue and digital satellite receivers and personal computers etc.

The long throw projection lens has been designed to allow the position of the projector to be located behind the viewer, similar to that of a real cinema (Fig. 2).

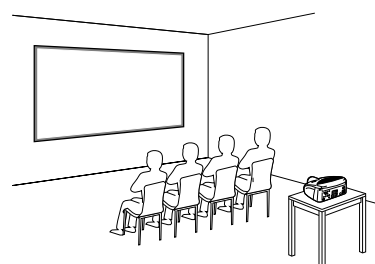


Fig. 2

The realistic colour and sharpness of detail has been obtained by a sophisticated and proprietary optical system designed exclusively by **STM Multimedia**.

The low-noise ventilation system – with variable speed fans – ensures appropriate cooling and maximizes projector reliability.

To fully appreciate your new **STM HT** projector we recommend the use of a good quality screen and surround-sound system. Contact your nearest authorized **STM Multimedia** dealer for further details.

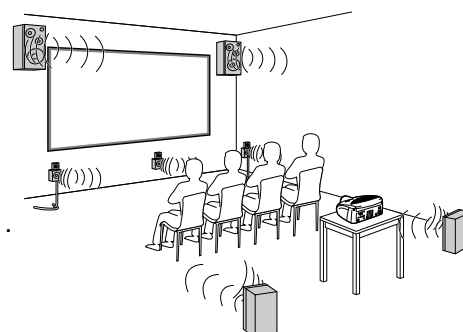


Fig. 3

## 4 SAFETY WARNINGS

Please follow carefully the warnings listed below, to ensure safe and long term performance of your projector.



**CAUTION: A special EVC socket on the projector's rear panel will allow connection to the optional Remote Input Interface (a special cable is required).**

**This is not to be confused with a VESA "Plug & Display"**

**Never connect a computer to this socket, as the projector and the computer may be damaged (Fig.4).**

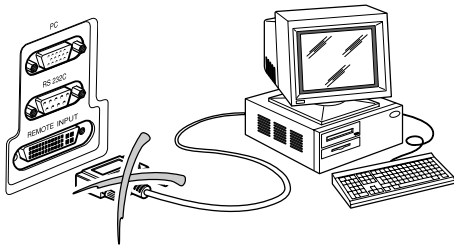


Fig. 4

Connect the projector to a power supply with a nominal voltage within the following values: 100-240 Vac, 50/60 Hz, earthed (Fig. 5).

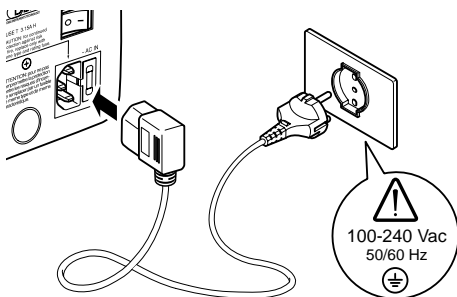


Fig. 5

The mains plug is the disconnect device. Take care when installing, that the mains plug and socket outlet are easily accessible. Never pull on the cable to take it out of the socket. If the system is unlikely to be used for a number of days, disconnect the power cable and other apparatus connected to it; also disconnect the aerial cable (where applicable).

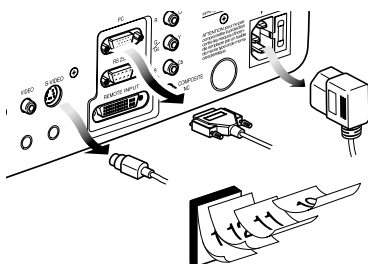


Fig. 6

To save energy, switch off the projector by using the power switch at the rear; in stand-by (red light on) the projector continues to draw a minimal amount of power (Fig. 7).

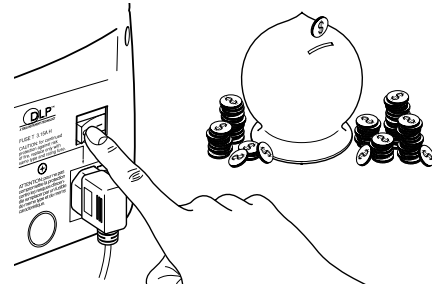


Fig. 7

Only replace the safety fuse (on the power socket at the rear of projector) with a fuse identical in type and characteristics (T 3.15A H) (Fig. 8).

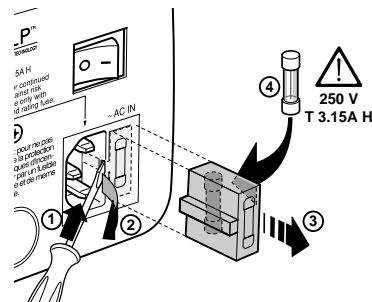


Fig. 8

Do not switch on your projector when flammable liquids or fumes are present. Do not pour or drop fluids in the vents (Fig. 9).

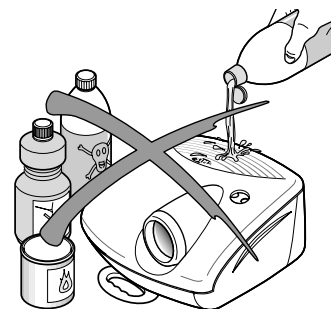


Fig. 9

Do not use the projector when the room temperature is above 35°C (95°F) (Fig. 10).

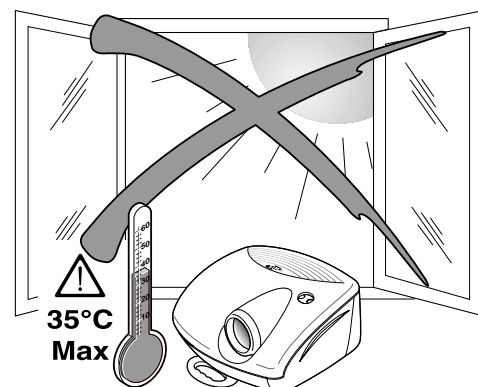


Fig. 10

Do not obstruct the cooling air inlets on the top cover, or the air outlets underneath the projector (Fig 11).

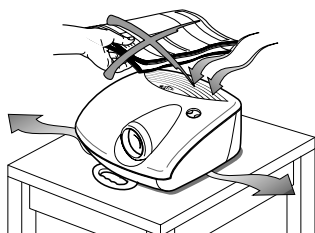


Fig. 11



**CAUTION:** Do not switch on the projector if it is standing on soft surfaces such as cushions, pillows, blankets, mattresses and carpets: the air cooling outlets underneath, could become obstructed.



Do not switch-on the projector if it is standing on surfaces sensitive to heat, as this may result in damage caused by the hot air outlets underneath. Should this be unavoidable take extra precaution of protecting the surfaces with a layer of heat resistant material (Fig. 12).

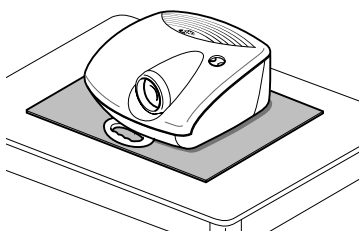


Fig. 12



**CAUTION:** Intense Light Source! Do not stare directly into the projection lens as possible eye damage could result. Be especially careful that children do not stare directly into the beam (Fig. 13).

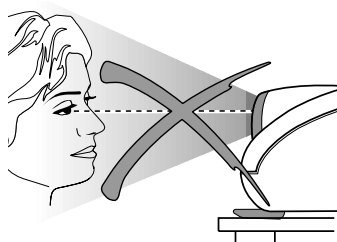


Fig. 13

Do not open the projector's cover; no user serviceable parts are inside. Refer servicing to qualified service personnel. Opening the projector's cover will invalidate warranty (Fig. 14).

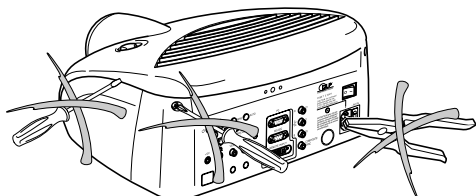


Fig. 14

Take care not to shake the projector whilst carrying it by the handle (Fig 15).



Fig. 15

Always position the projector on a stable, suitable surface, away from direct heat sources.

Do not touch the surface of the projection lens.

Do not rest the projector on the side panels or on the rear panel when in operation (Fig. 16).

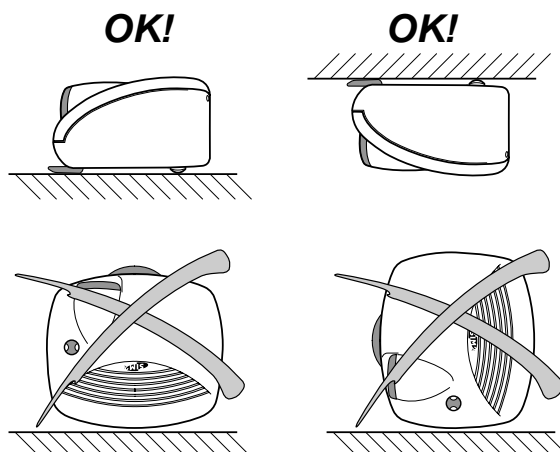


Fig. 16

Take care to position cables safely, especially in dark places, in order to avoid a trip hazard (Fig. 17).

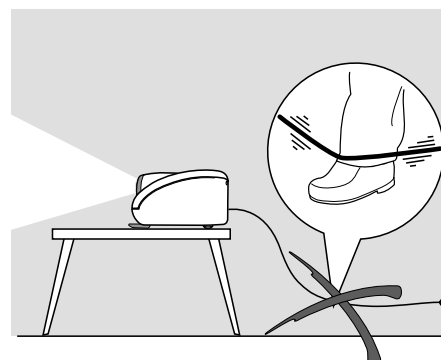


Fig. 17



**CAUTION:** For installations using a ceiling or wall-mounted bracket, carefully follow the installation and safety instructions provided with the bracket's literature.

Please remove batteries from the remote control if not in use for a long period of time.

## 5 PROJECTOR'S DESCRIPTION

Dimensions (in millimetres) (Fig. 18).

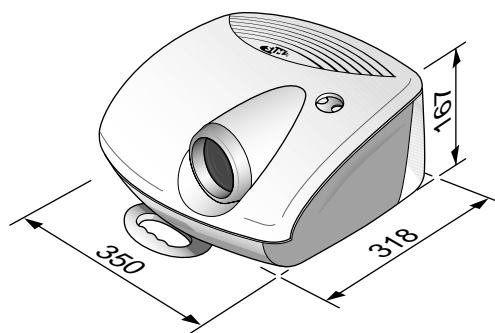


Fig. 18

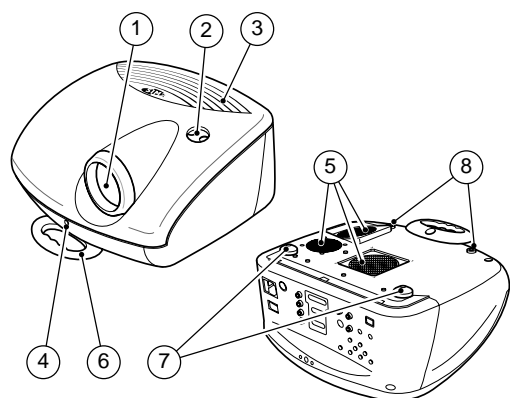


Fig. 19

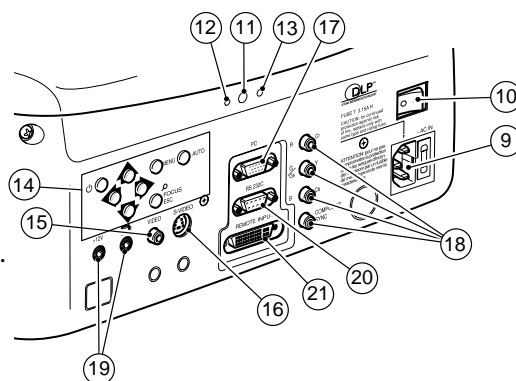


Fig. 20

- 1 Lens.
- 2 Lens height adjustment handle.
- 3 Cooling air inlet vents.
- 4 Remote control infrared sensor.
- 5 Cooling air outlet vents.
- 6 Adjustable carry-handle.
- 7 Adjustable levelling feet.
- 8 Ceiling/wall bracket fixing holes.
- 9 Fused power socket.
- 10 Power switch.
- 11 Remote control's rear infrared receiver.
- 12 Green "ON" light.
- 13 Red "STAND-BY" light.
- 14 Rear keyboard pad.
- 15 Composite video input.
- 16 S-Video input.
- 17 VGA input.
- 18 RGB input / YCrCb components.
- 19 12V screen output.
- 20 RS232 interface connector.
- 21 Remote Input Interface EVC connector.

## 6 INSTALLATION


### LOCATION OF PROJECTOR AND SCREEN

The long throw projection lens has been designed to allow the position of the projector to be located behind the viewer, similar to that of a real cinema (Fig. 2).

Position the projector on a stable, suitable platform or utilise the optional bracket for a fixed ceiling or wall installation.

Should the projected image appear not to be level, adjust the feet underneath to obtain a level position, lining up the base of the projected image to the base of the projection screen (Fig. 21).



**CAUTION:** In the case of ceiling or wall mounting using a suspension bracket, follow the instructions carefully and comply with the safety standards you will find in the box together with the bracket. If you use a bracket different to the one supplied by  Multimedia, you must make sure that the projector is at least 6.5 cm (2.6") from the ceiling and that the bracket is not obstructing the air vents on the lid and on the bottom of the projector.

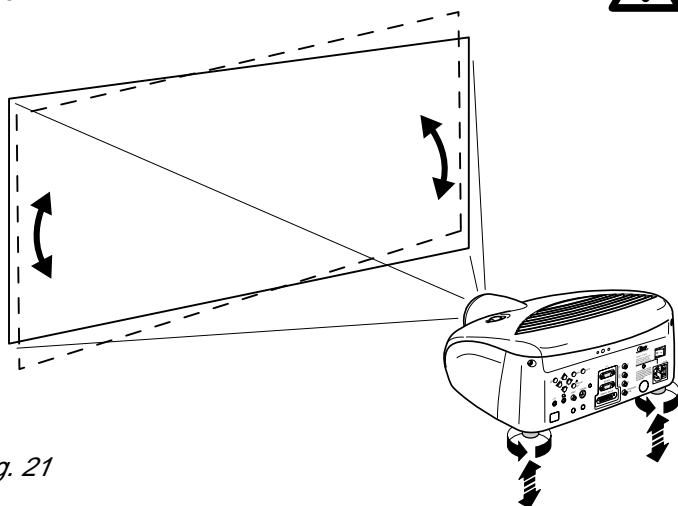


Fig. 21



## 7 PROJECTION DISTANCES

Follow the table below to determine the optimal projection distance (between the screen and the center of the lens). This will help you to obtain the desired screen size (*Fig. 22A-22B*).

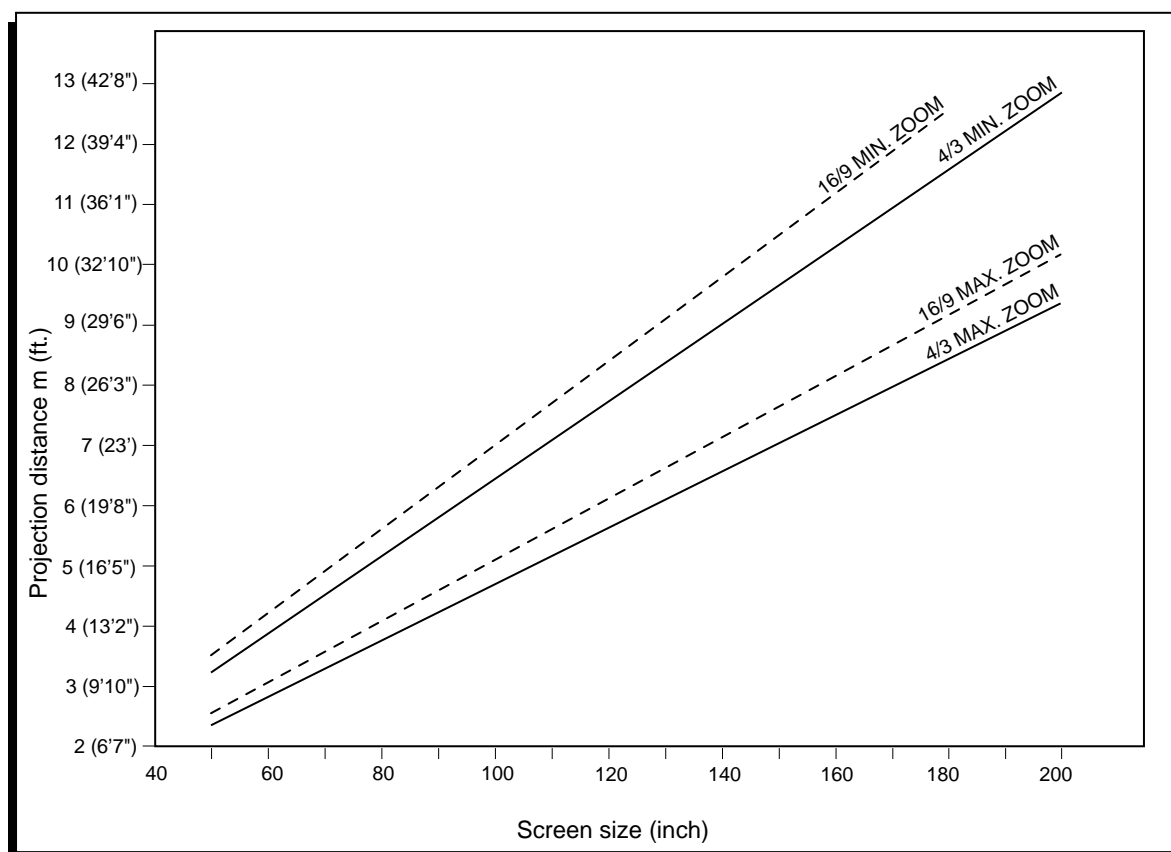
HT 200												
Screen size (diagonal) in.	4/3						16/9					
	Screen width		Projection distance				Screen width		Projection distance			
			min		max				min		max	
	m	in.	m	ft.	m	ft.	m	in.	m	ft.	m	ft.
50	1.0	40	2.3	7'8"	3.2	10'6"	1.1	44	2.6	8'4"	3.5	11'6"
60	1.2	48	2.8	9'2"	3.9	12'8"	1.3	52	3.1	10'1"	4.2	13'9"
70	1.4	56	3.3	10'9"	4.5	14'9"	1.6	61	3.6	11'8"	4.9	16'1"
80	1.6	64	3.7	12'3"	5.1	16'10"	1.8	70	4.1	13'4"	5.6	18'5"
90	1.8	72	4.2	13'10"	5.8	19'	2.0	78	4.6	15'	6.3	20'8"
100	2.0	80	4.7	15'4"	6.4	21'1"	2.2	87	5.1	16'8"	7.0	23'
120	2.4	96	5.6	18'5"	7.7	25'4"	2.7	105	6.1	20'1"	8.4	27'6"
150	3.1	120	7.0	23'	9.6	31'7"	3.3	131	7.6	25'1"	10.5	34'5"
180	3.7	144	8.4	27'7"	11.6	37'11"	4.0	157	9.2	30'1"	12.6	41'4"
200	4.1	160	9.4	30'8"	12.8	42'2"	4.4	174	10.2	33'5"	-	-
220	4.5	176	10.3	33'9"	-	-	4.9	192	11.2	36'9"	-	-
250	5.1	200	11.7	38'4"	-	-	5.5	218	12.7	41'9"	-	-

Fig. 22A

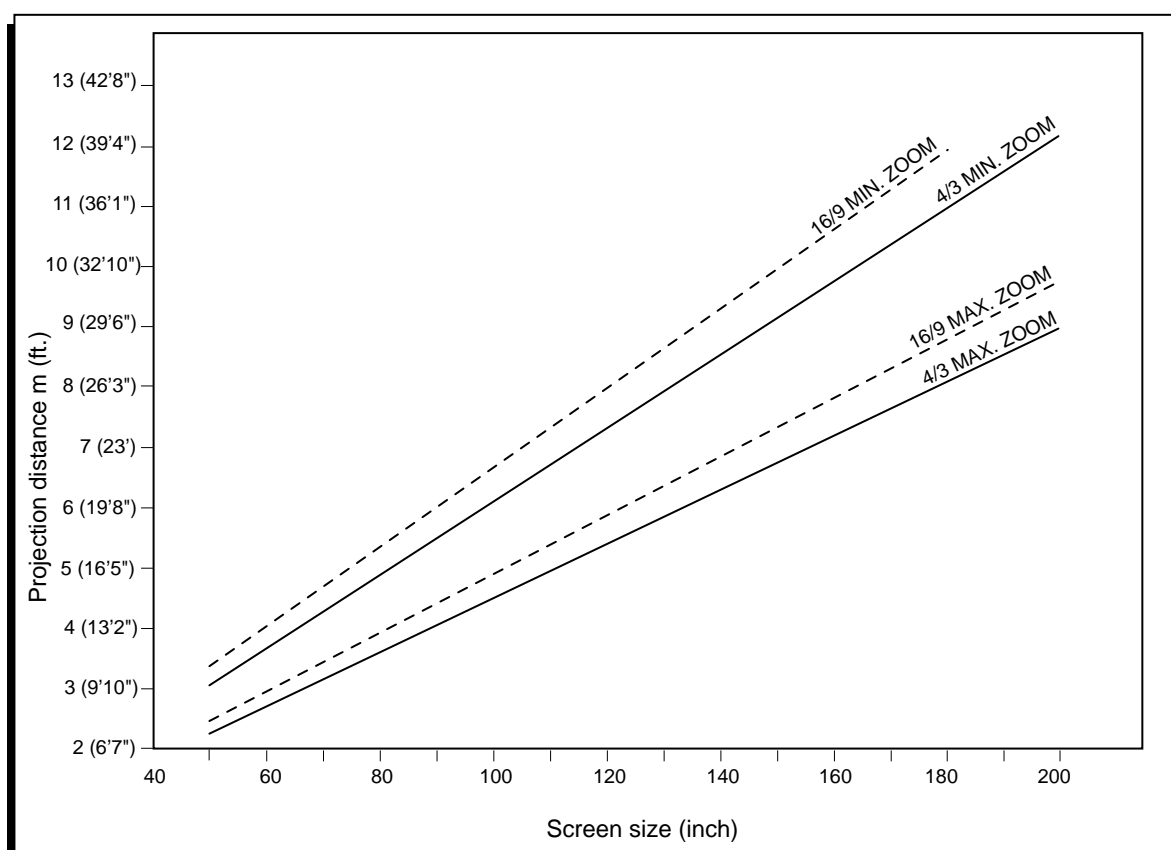
HT 250												
Screen size (diagonal)  in.	4/3						16/9					
	Screen width		Projection distance				Screen width		Projection distance			
			min		max				min		max	
	m	in.	m	ft.	m	ft.	m	in.	m	ft.	m	ft.
50	1.0	40	2.3	7'4"	3.0	10'	1.1	44	2.4	8'	3.3	10'11"
60	1.2	48	2.7	8'9"	3.7	12'	1.3	52	2.9	9'7"	4.0	13'8"
70	1.4	56	3.1	10'3"	4.3	14'	1.6	61	3.4	11'2"	4.6	15'3"
80	1.6	64	3.6	11'9"	4.9	16'	1.8	70	3.9	12'9"	5.3	17'5"
90	1.8	72	4.0	13'2"	5.5	18'	2.0	78	4.4	14'5"	6.0	19'7"
100	2.0	80	4.5	14'8"	6.1	20'	2.2	87	4.9	16'	6.6	21'9"
120	2.4	96	5.4	17'7"	7.3	24'	2.7	105	5.8	19'2"	8.0	26'2"
150	3.0	120	6.7	22'1"	9.1	30'	3.3	131	7.3	24'	10.0	32'8"
180	3.7	144	8.0	26'5"	11.0	36'	4.0	157	8.8	28'9"	11.9	39'3"
200	4.1	160	8.9	29'4"	12.2	40'	4.4	174	9.7	32'	-	-
220	4.5	176	9.8	32'3"	-	-	4.9	192	10.7	35'2"	-	-
250	5.1	200	11.2	36'8"	-	-	5.5	218	12.2	39'11"	-	-

Fig. 22B

## PROJECTION DISTANCE (HT 200)



## PROJECTION DISTANCE (HT 250)





Adjust the motorised zoom lens to enlarge or reduce the projected image.

Adjust the motorised focus of the lens to achieve maximum clarity.

With optimum focus you should be able to clearly see each single pixel of the DLP when within close proximity to the screen (Fig. 23).

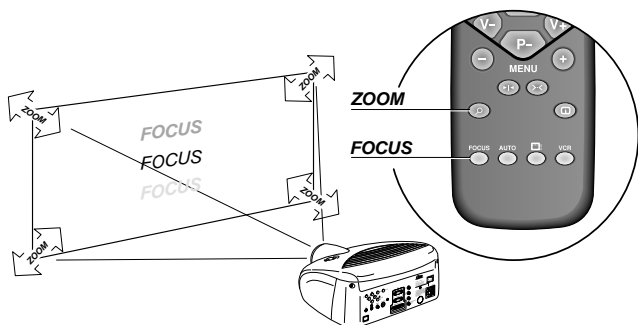


Fig. 23

Enter the **Set up** menu, by remote control or keyboard, to adjust the motorised **Zoom** and **Focus**; alternatively directly press the **Focus** or **Zoom** button on the remote control or **Focus-Esc** on the keyboard pad. **V+** and **V-** should be used for adjustment.

The manual lens shift adjustment allows the projected image to be moved vertically, up or down, in relation to the centre of the screen; the maximum adjustment being equal to half the height of the image in either direction (Fig. 24).

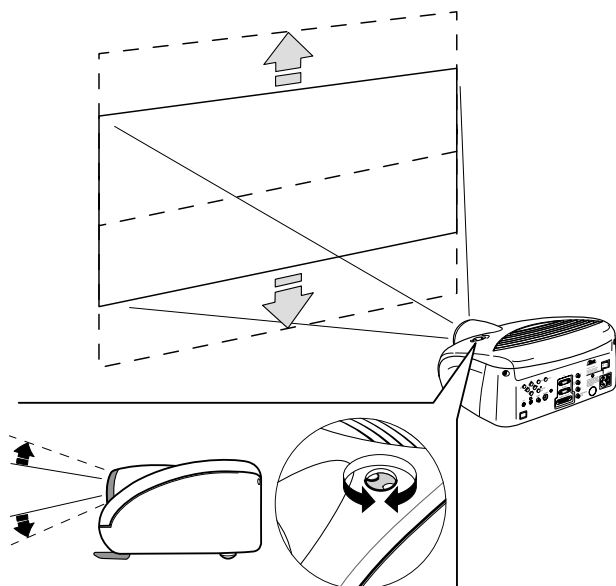


Fig. 24

In the event you are unable to centre the image within the screen area, tilt the projector until the image is correctly positioned. Any **Keystone** error can be removed by the keystone adjustment in the **Set up** menu (Fig. 25).

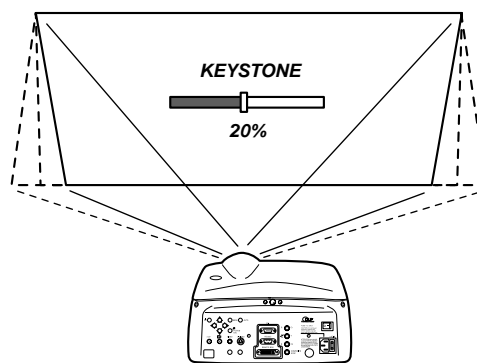


Fig. 25

The **Orientation** adjustment in the **Set up** menu will allow the projector to be used for desktop front, ceiling front, desktop rear and ceiling rear installations (Fig. 26).

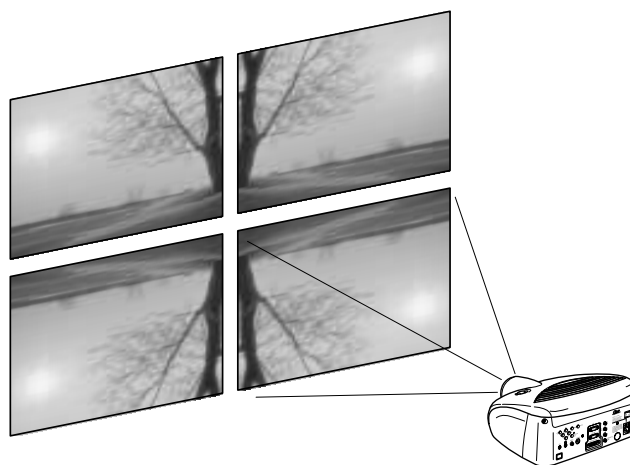


Fig. 26

To activate an electric motorised screen a 12 Volt output is provided at the rear of the projector or with the optional Remote Input Interface. This can be connected to a screen interface unit, which can be supplied by screen manufacturers (Fig. 27).

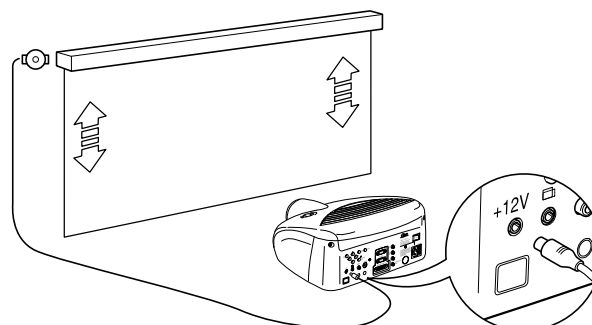


Fig. 27

The output is activated (Voltage: 12 Vdc) when the projector is switched on (green LED on) and is de-activated (no Voltage output) when the projector is in stand-by mode (red LED on).

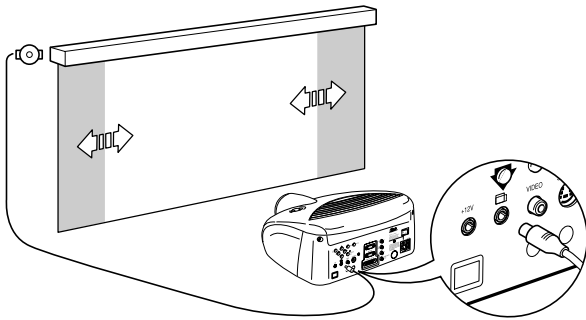



Fig. 28

Some manufacturers offer screen-masking systems to help frame the projected image and improve picture contrast. This can be controlled by the second 12V output on the projector (Fig. 28).

The screen-masking interface can be connected to output , at the rear of the projector, or on the optional Remote Input Interface.

- Rear projection: the screen must be translucent.
- Front projection: preferably, use a screen with black, non-reflecting borders, which will perfectly frame the projected image.

Avoid light shining directly on the screen during projection as this will reduce contrast and black level detail on the projected image. For the true cinema experience best results are achieved with little or no ambient light.

Furniture and other objects with reflecting surfaces, as well as light coloured walls should be avoided, as they are likely to interfere with the screen's characteristics.

We recommend the use of screens with low gain specifications (i.e. 1.3 to 2). The use of high gain screens should be avoided due to their limited viewing angle, which is undesirable for a large audience.

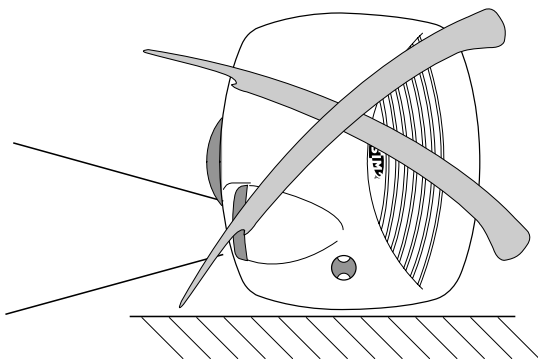


Fig. 29



**Do not install - or operate - the projector on its side: this position will dramatically shorten the life of the lamp (Fig. 29).**

## 8 LED: DESCRIPTION AND SWITCHING ON



**CAUTION:** Connect the projector to a power supply with a nominal voltage within the following values: 100-240 Vac, 50/60 Hz. It must be earthed (Fig. 30).

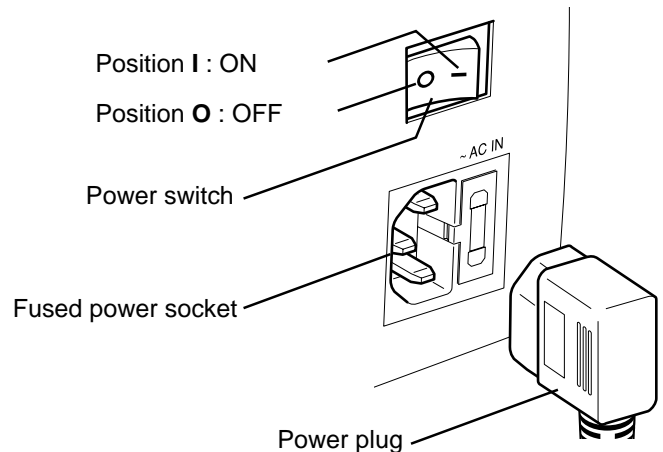


Fig. 30

Upon switch on (in position I) the projector will initialise, indicated by the flashing red LED. Followed by stand-by mode (red LED static) (Fig. 31).

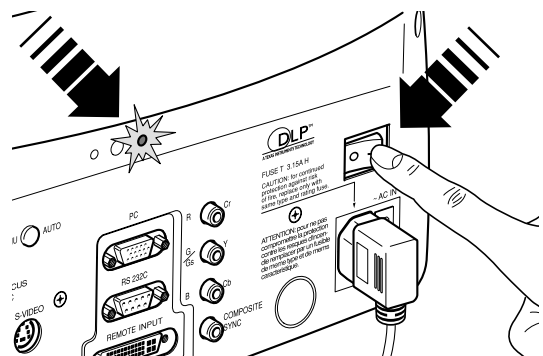


Fig. 31

## 8.1 SWITCH ON FROM STAND-BY

By remote control: press one of 1...9

By keyboard: press **Arrow Up** or **Arrow Down**.

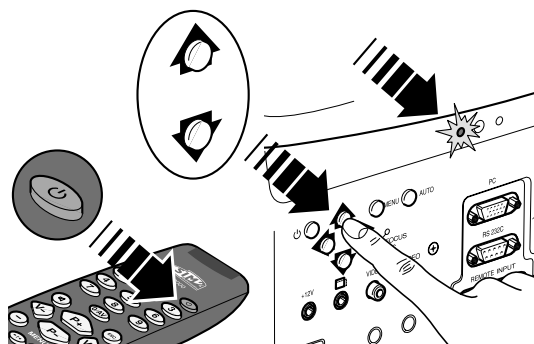


Fig. 32

When switching on from stand-by, the projector will turn on the lamp (flashing green LED); after a brief warm up period the image will be displayed (green LED on). The input automatically selected will be the last one memorised prior to switch off (Fig. 32).

## 8.2 SWITCHING OFF AND RETURNING TO STAND-BY

By remote control: press

By keyboard: press key

When switching off, the projector goes in to stand-by (red and green LED flashing) memorising the input selection at the time of switch-off.

The fans will continue to work until the lamp has cooled down. They will stop automatically after this period.

## 8.3 FAILURE OF THE LAMP TO LIGHT

Switching on from stand-by. If the lamp fails to come on (the projector will automatically make five attempts), an error will be registered by a flashing red LED. This can be reset by switching the power switch to position .



**You may experience difficulties switching on the projector shortly after turning off into stand-by mode. This is not a fault. The lamp is still too hot for the switch-on procedure to take place.**

Wait a few minutes before turning on again (position , this will allow the lamp to cool down to the correct temperature.



**The life of the lamp is dependant on the number of times the projector is switched ON and OFF.**

## 9. DESCRIPTION OF CONNECTIONS

To obtain the best performance from your projector, we recommend the use of good quality "video cables" to the various signal sources (75 ohm Impedance). Poor quality cables will cause inferior picture performance.

For optimum connectivity we recommend you follow these simple steps:

- With exception of coaxial RCA/Phono type connectors, always double-check that the plug is inserted the correct way round to avoid damaging the plugs or the sockets on the projector (Fig. 33).

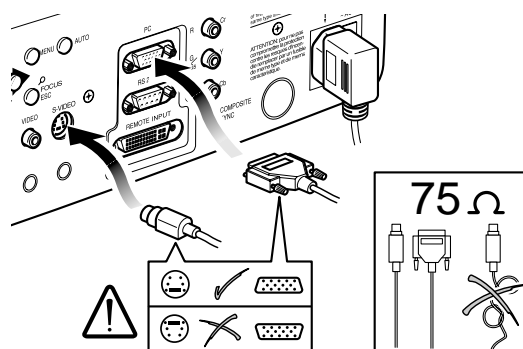


Fig. 33

- Remove cables by the plug and do not pull on the cable itself.
- Avoid tangled cables.
- Position the cables carefully to avoid a trip hazard - especially in low light areas (Fig. 34).

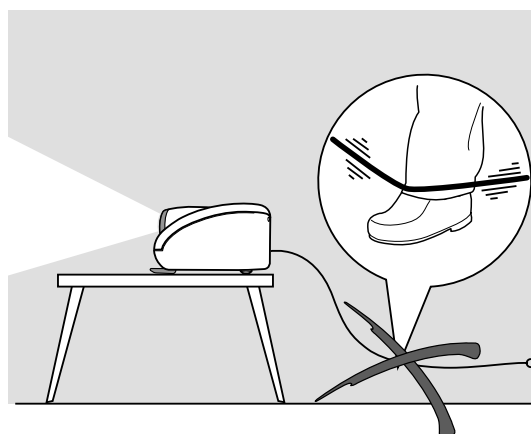


Fig. 34

## 10 INPUT SIGNALS

### 10.1 COMPOSITE VIDEO INPUT

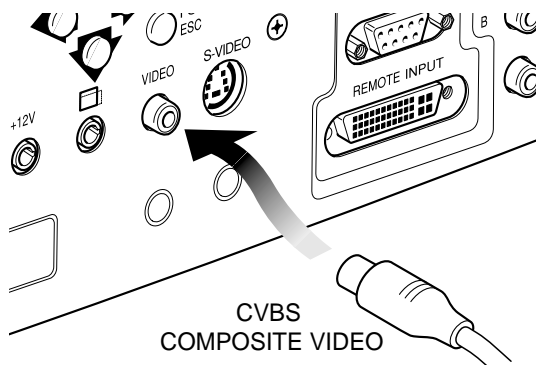


Fig. 35

This input is suitable for a "Composite Video CVBS". Via a cable with an RCA/Phono connector (Fig. 35).

### 10.2 S-VIDEO INPUT

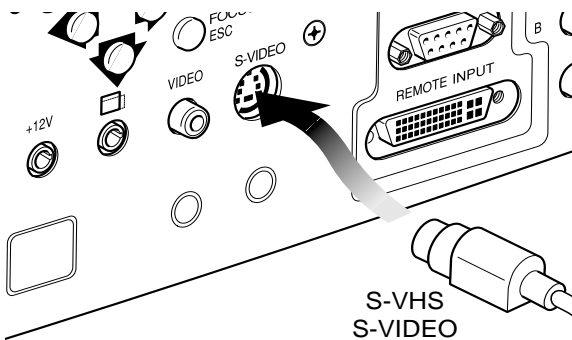


Fig. 36

This input is suitable for equipment fitted with a S-Video output to give improved picture performance (S-VIDEO / S-VHS). Connection is made via a 4-pin mini-DIN (Fig. 36).

### 10.3 VGA INPUT

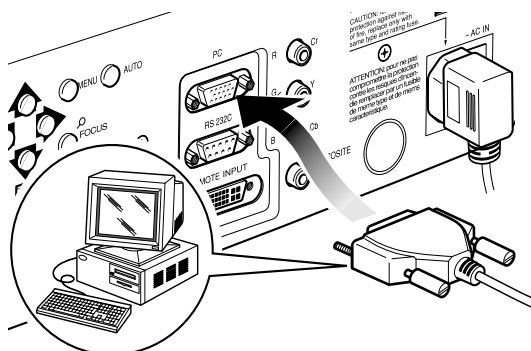


Fig. 37

Personal Computers, Video Processors (scalers) and Video Game consoles can be connected to the projector via the HDB 15-Pin (VGA) terminal. Ensure the output of

equipment connected is RGB with one of the following synchronisation options: separate H/V Sync, H+V Composite Sync, (RGsB) composite sync on the green signal (Fig. 37). This input accepts a Horizontal Scan Frequency of between 15-80 kHz and a Vertical frequency of between 40-100 Hz. Computer Resolutions of VGA, SVGA, XGA, SXGA and UXGA can be displayed. The true native resolution of the HT200 is SVGA (800 x 600) and the true native resolution of the HT250 is XGA (1024 x 768).

### 10.4 RGB/YCRCB INPUT

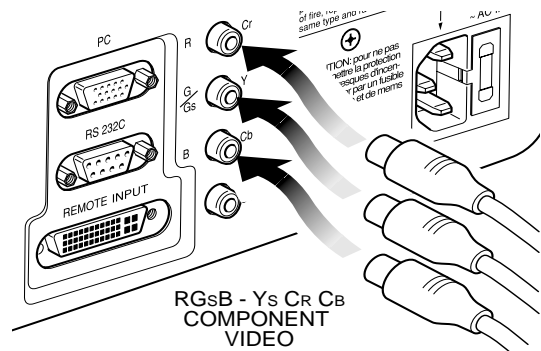


Fig. 38

This input is suitable for a RGB video signal, or for a Component Video (YCrCb) type, with composite synchronisation on the green signal (RGsB) or on the luminance (Y) signal (YsCrCb) through a cable with RCA/Phono type connector (Fig. 38).

Only horizontal scanning frequencies of 15 kHz (standard video resolution) or 32 kHz (high definition video, with progressive scanning) can be applied to this input.



**If a single signal is applied to the projector and that source was selected, the image coming from that input will be projected.**

**If signals are applied to several inputs, you can select the desired input by one of the following methods:**

- browsing the Source Selection menu, by remote control or rear key pad
- pressing the remote control's digit key corresponding to the desired input

### 10.5 REMOTE INPUT INTERFACE CONNECTING CABLE

With a special cable (optional), it is possible to connect the Remote Input Interface (optional) to the projector.



**Upon switch on via the power switch, the projector will automatically detect the Remote Input Interface, identify which inputs are connected and these will be added to the Input selection on the menu.**



**CAUTION: Connect/disconnect the special Remote Input Interface cable only when the projector is switched off and disconnected**

from the mains (switch in position O). This is not a vesa "Plug & Display" connector. never connect a computer to this socket. the projector and the computer may be damaged (Fig. 40).

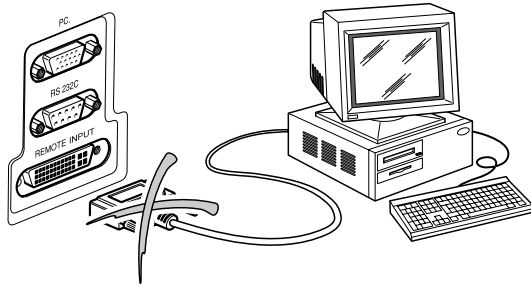


Fig. 40

## 10.6 MOTORISED PROJECTION SCREEN OUTPUT

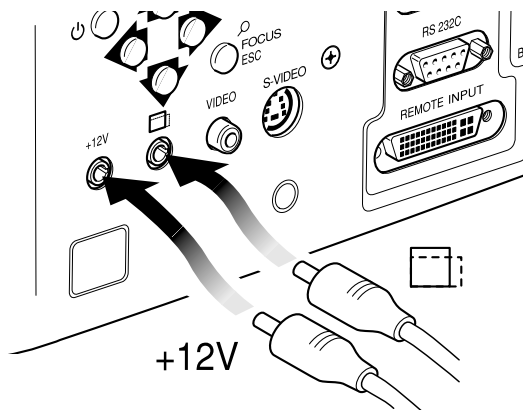



Fig. 41

The projector is equipped with two outputs (Voltage: 12 Vdc) for motorised projection screen and screen masking systems. These 12V outputs should be connected to the appropriate screen interface provided by the screen manufacturer (Fig. 41).

The +12V output is activated when the projector is switched on (green LED on) and is de-activated when the projector is in stand-by mode (red LED on).

The output  is active when one of the following modes, from the **Image Aspect Ratio Selection** Menu, is selected: **Normal**, **Letterbox** and **Zoom**.

The output is inactive when the **Anamorphic** mode is selected on the same **Image Aspect Ratio Selection** Menu.

This output allows reduction in the area of a 16:9 screen, into a 4:3 format, by activating a screen masking system (refer to screen manufacturer for further information).

## 10.7 RS232 INTERFACE CONNECTOR

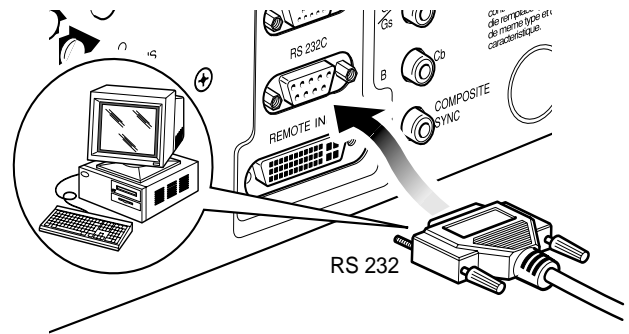


Fig. 42

It is possible to control the projector through a personal computer. First, load the appropriate projector control software onto your PC, then simply connect this input to a cable from your PC's RS232 serial port (Fig. 42).

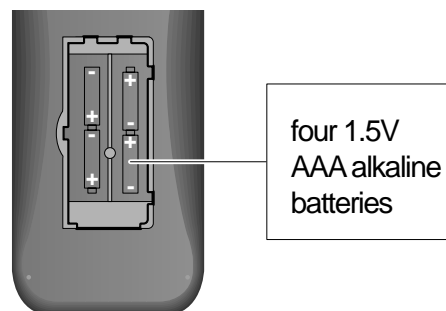
The CD-ROM enclosed in the manual, provides all the information needed to prepare the PC for RS232 connection, including the interface protocol and the communication software.



## 11 REMOTE CONTROL DESCRIPTION

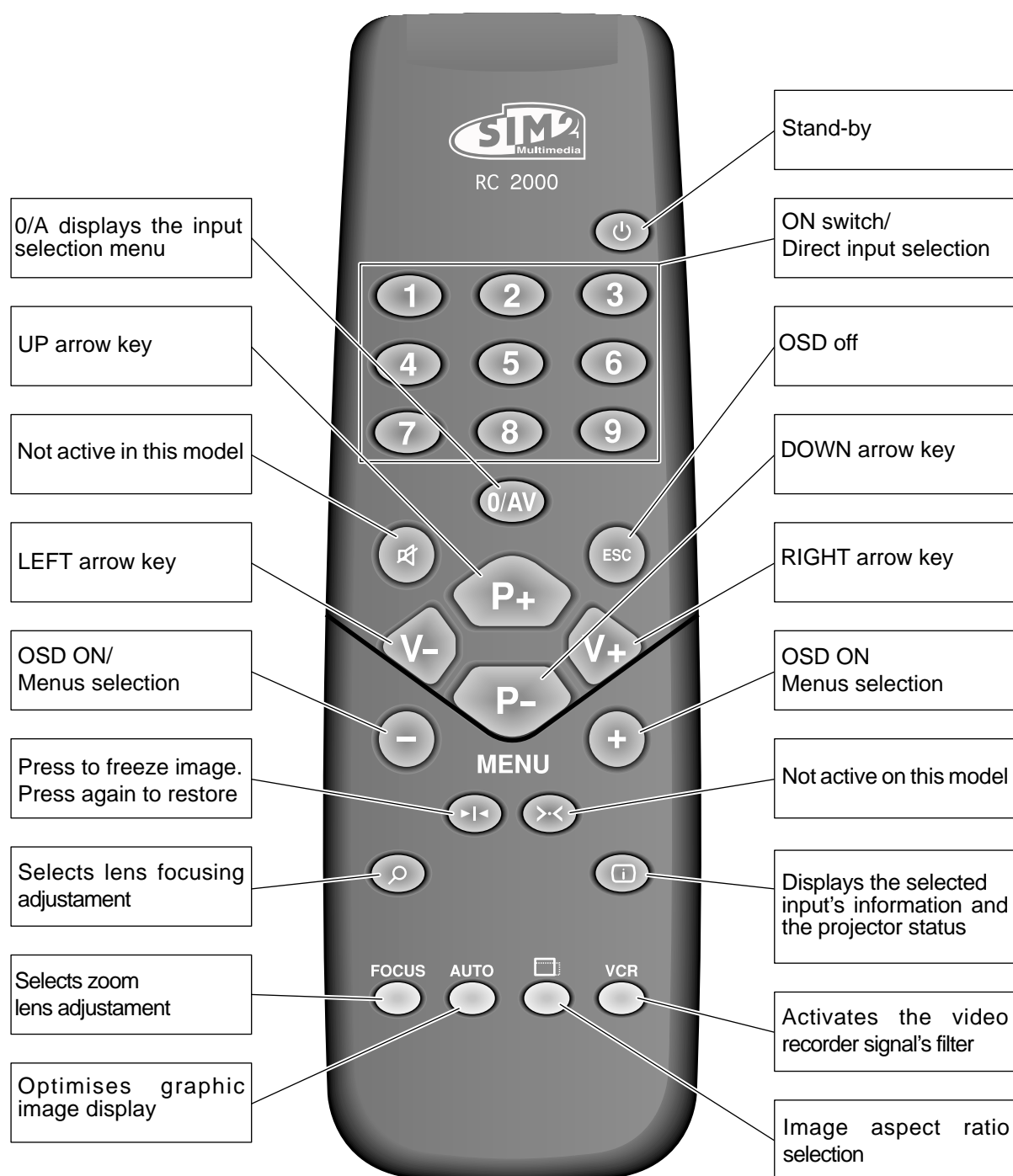
The remote control requires four 1.5V, AAA alkaline batteries.

Insert the batteries, taking care to match the polarity, as indicated in the battery recess of the remote (*Fig. 42*).



*Fig. 42*

### 11.1 REMOTE CONTROL FUNCTIONS



*Fig. 43*



Change the batteries in the remote control if experiencing difficulty in sending commands to the projector. If the remote control is not to be used for a long period of time remove the batteries. Replace all batteries at the same time; do not replace one new battery with a used battery. If the batteries have leaked, carefully wipe the case clean and replace with new batteries.

The remote control sends commands to the projector via infrared signals.

It is possible to control the projector by pointing the remote control at the screen; the sensor at the front of the projector will pick up the reflected infrared commands. (Fig. 44).

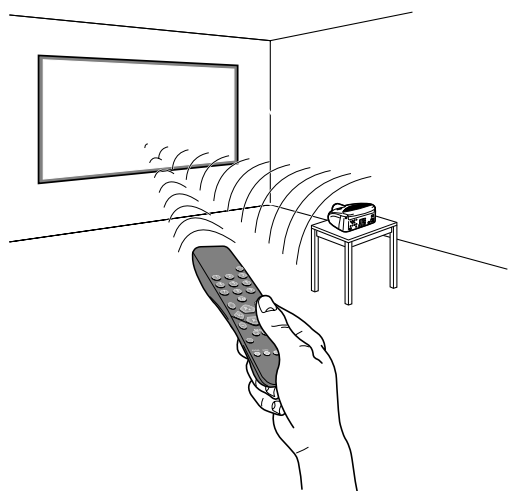


Fig. 44

Avoid placing obstructions between the remote control and the infrared sensor at the front of the projector; this will impair the remote control performance.

## 12 DESCRIPTION OF THE KEYBOARD PAD

Eight push buttons, at the rear of the projector, will allow complete operation without the use of the remote control (Fig. 45).

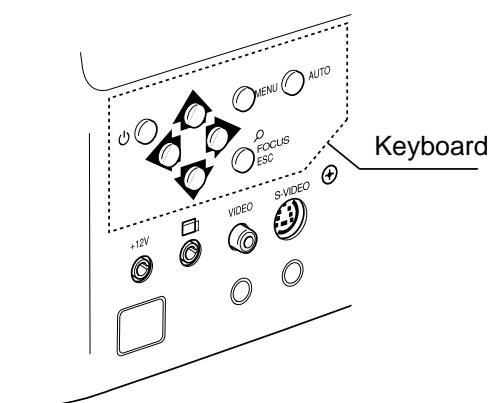



Fig. 45

**Button  :** to switch-off to stand-by.

**Arrow button:** to browse the On Screen Display menu and to adjust. Push **Arrow Up** or **Arrow Down** to switch on from stand-by.

**Menu button:** to activate the On Screen Display menu.

**-Focus-Esc button:** to deactivate the On Screen Display and to give access to the lens zoom/focus adjustment functions.

**Auto button:** to enable auto-configuration. Press this button to automatically optimise the displayed image.

## 13 MENU DESCRIPTION

To access the main On Screen Display menu, press the **Menu** key on the keyboard or the key **Menu +** or **Menu -** on the remote control (Fig. 46).

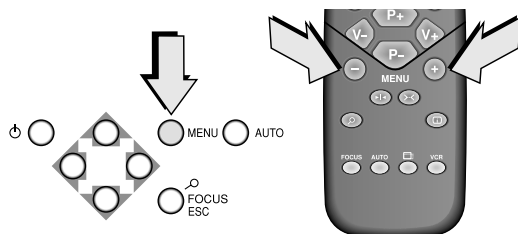


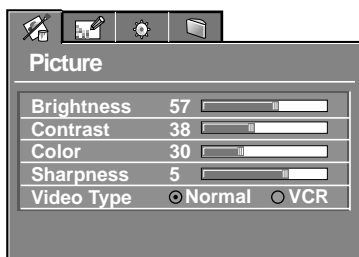
Fig. 46

The main menu is divided into four sections to cover various adjustments in a practical and logical manner.

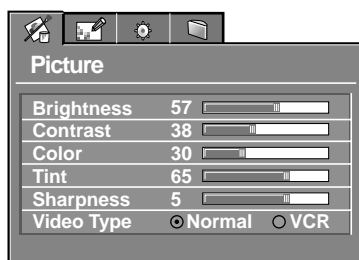
The on-screen menu layout is dependant upon the chosen input signal so various options may not be applicable, i.e. some typical adjustments to the video signal are not applicable to the graphic RGB signals from PC and vice versa.

### 13.1 PICTURE

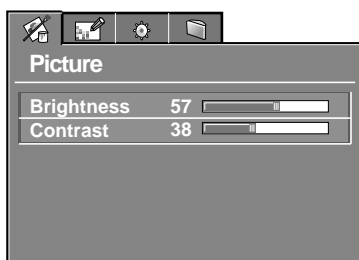
This menu features adjustments relating to the projected image quality.



VIDEO



VIDEO-NTSC



RGB

#### 13.1.1 BRIGHTNESS

Use this control to adjust the image's black level.

#### 13.1.2 CONTRAST

Use this control to adjust the image's white level, be careful not to over saturate the white level.

#### 13.1.3 COLOR

Use this control to adjust the colour level.

#### 13.1.4 TINT

Controls the purity of the colours, to NTSC coded signal standards. Tint is only applicable to video input with NTSC standard.

#### 13.1.5 SHARPNESS

Use this adjustment to increase or decrease the level of picture detail.

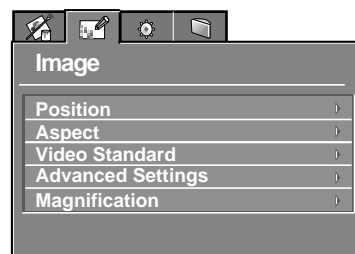
#### 13.1.6 VIDEO TYPE

Inserts a filter that improves stability of images from video-recorders.

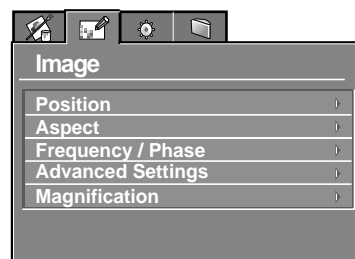
To toggle between **Normal** and **VCR** mode, press the **VCR** key on the remote control.

### 13.2 IMAGE ADJUSTMENTS

This menu features adjustments relating to position, aspect ratio and magnification etc.



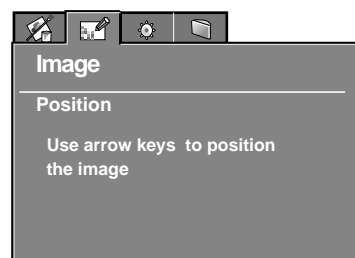
VIDEO



RGB

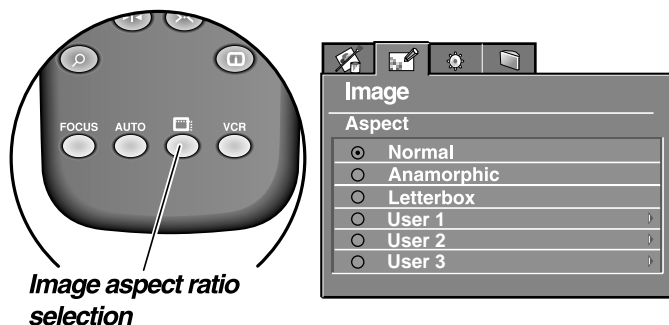
#### 13.2.1 POSITION

Use this adjustment to position the image vertically and horizontally.



### 13.2.2 ASPECT

Determines the aspect ratio of the projected image.



By using the key on the remote control is possible to select the screen aspect.

	INPUT	16/9 SCREEN		4/3 SCREEN
Normal			ON	
Anamorphic			OFF	
Letterbox			ON	

Manual zoom

#### 13.2.2.1 Normal

Use this display mode when showing 4:3 material on a 4:3 screen. This mode should also be used when displaying Letterbox or Wide Screen films that do not contain the 16:9 enhancement.

If the displayed signal is a Wide Screen format and the image is projected on a 16:9 screen, you can use all of the available screen area with the **Zoom** Lens adjustment.

#### 13.2.2.2 Anamorphic

Use this display mode with a DVD that is marked as "Enhanced for Widescreen TV's", "16:9 Anamorphic", and/or ATSC High Definition Broadcasts. This will compress the image vertically so that the correct aspect ratio of the film can be displayed. (Please note you must ensure that your DVD player and/or satellite receiver are set to 16:9 output), you can use all of the available screen area with the **Zoom** Lens adjustment.

#### 13.2.2.3 Letterbox

Displays an Anamorphic (horizontally compressed) 16:9 signal, as a 4:3 formatted image, eliminating the left and right borders of the image.

#### 13.2.2.4 User 1, 2, 3

Should you wish to use a format different to those pre-set, go to **User** menus.

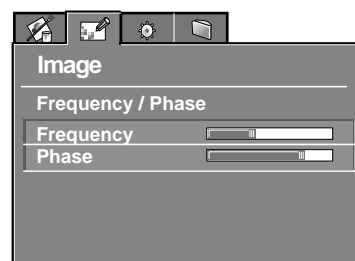


By using the **Horizontal** and **Vertical** adjustments it is possible to select the screen shape of your choice. It is important to keep the relation between height and width so that the correct aspect ratio can be maintained.

**Screen Control.** If an appropriate screen-masking interface is connected to the 12V output socket "" it is possible to re-frame the screen to a variety of aspect ratios and screen sizes (please refer to the screen manufacturer's manual).

### 13.2.3 FREQUENCY / PHASE

In the case of RGB graphic signals this adjustment is used for synchronization of the RGB image to the number of pixels on the DLP.



RGB

#### 13.2.3.1 Frequency

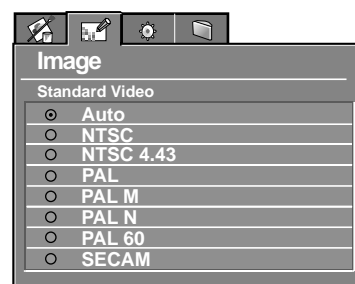
The correct frequency adjustment eliminates vertical band interference.

#### 13.2.3.2 Phase

The phase adjustment determines the stability and sharpness of the vertical lines in the projected image.

### 13.2.4 STANDARD VIDEO

Selects the video standards option.

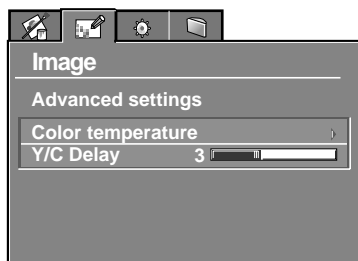


VIDEO

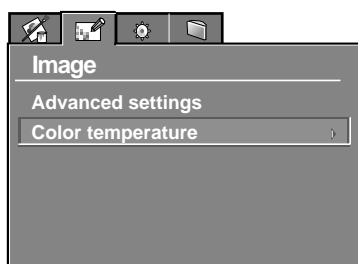
By selecting **Auto** the projector automatically sets the video standard.

### 13.2.5 ADVANCED SETTINGS

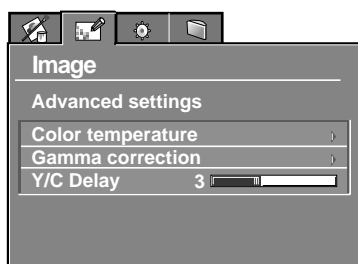
Advanced colour settings are accessible via this menu.



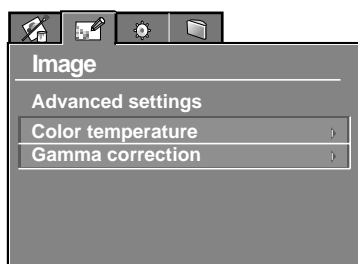
*HT 200 - VIDEO*



*HT 200 - RGB*



*HT 250 - VIDEO*



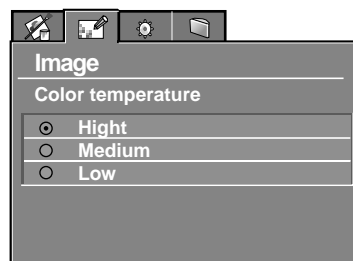
*HT 250 - RGB*

We recommend the use of these settings only to the experienced user, as their adjustment can seriously affect final image quality.

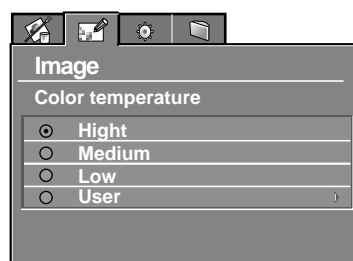
However it is possible to return to optimal manufacturers settings, by selecting **Reset**.

#### 13.2.5.1 Colour temperature

Select the colour temperature of the projected image.



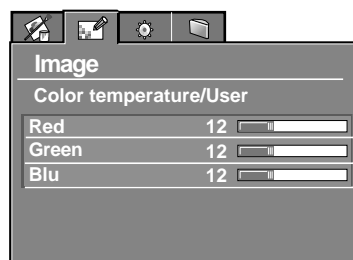
*HT 200*



*HT 250*

There are three fixed colour temperature settings, which are: **High** (8000÷9000 degrees K), **Medium** (circa 6500 degrees K), **Low** (5000÷6000 degrees K).

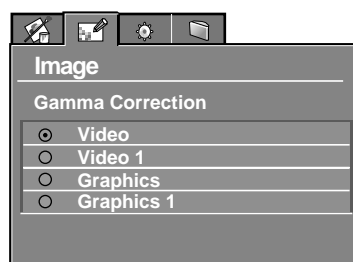
The **User** option will allow you to select the colour temperature of your choice (**HT250 only**).



*HT 250*

#### 13.2.5.2 Gamma correction (HT 250 only)

Selects the Gamma's correction curve. It determines the projector's response to the grey scale, emphasizing - more or less - the different grades of brightness (blacks, dark, medium, light greys, whites) in the projected image.



*HT 250*

### 13.2.5.3 Y / C Delay

Use this adjustment in the event of horizontal colour misalignment within the projected image. It is recommended that a colour bar test pattern be used for this adjustment.

### 13.2.6 MAGNIFICATION

Use this adjustment to magnify the projected image (please note the higher the magnification the poorer the quality of the image projected).

Select *Zoom* (the magnifying lens icon will appear at the centre of the image) to adjust the level of enlargement, using the **LEFT** and **RIGHT** arrows.



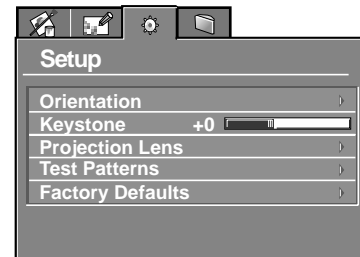
Select *Pan* (zoom button on the remote control) to choose the area of image to enlarge, using all four-arrow keys.



Via remote control, it is possible to alternate between modes, by pressing the  $\rho$  key on the keyboard pad. Alternatively pressing the  $\rho$ -**Focus-Esc** button allows you to select between *Zoom* and *Pan*.

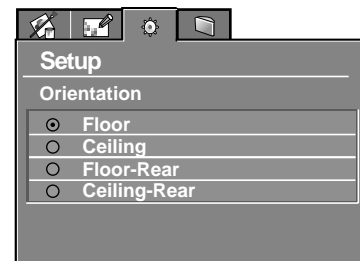
## 13.3 SET UP

The installation menu gives access to features that will allow for correct installation of the projector.



### 13.3.1 ORIENTATION

Select the option that best describes the installation i.e. desktop front, ceiling front/desktop rear, and ceiling rear.



### 13.3.2 KEYSTONE

If the projector is at an angle in relation to the screen, keystone distortion will occur. Use the keystone adjustment to restore the projected image to the correct shape. The angle of projection is limited to + or - 10 degrees. If the projector is level then use the lens shift feature to correctly position the image on screen (Fig. 47).

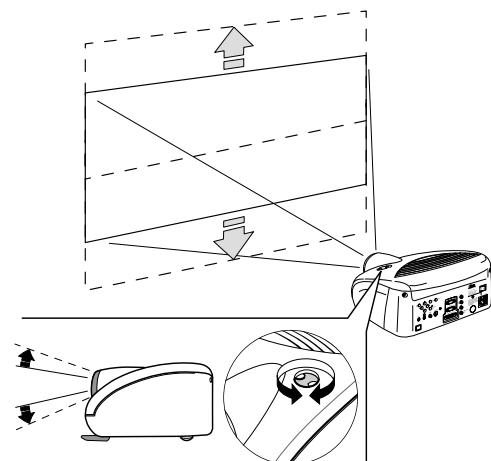




Fig. 47

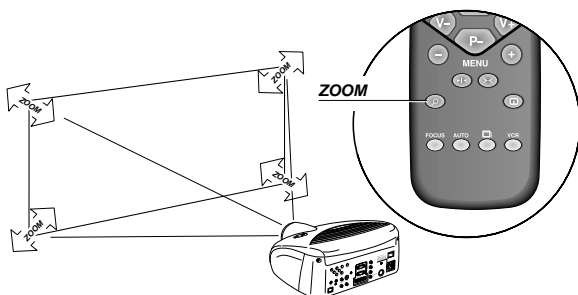
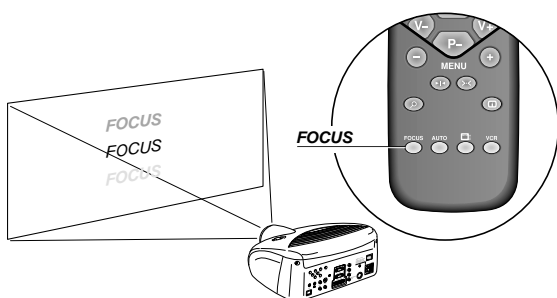
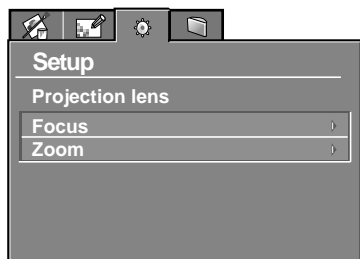
To obtain maximum quality of the projected image, we recommend the installation of the projector on a level platform parallel and central to the screen. In the event that the picture is not correctly positioned use the lens shift feature.

Should it not be possible to centralize the image by adjusting the lens height, tilt the projector, but this will create keystone error (please refer to 13.3.2).

### 13.3.3 PROJECTION LENS

To adjust **Focus** and **Size** of the projected image, use the lens settings.

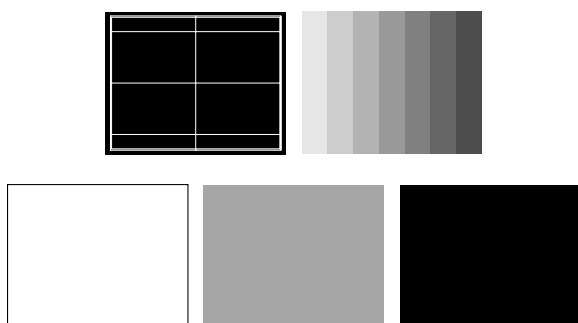
Alternatively, press keys **Focus** and **Zoom**  on your remote control. Or by pressing three times the key  **Focus-Esc** on keyboard pad.



### 13.3.4 TEST PATTERNS

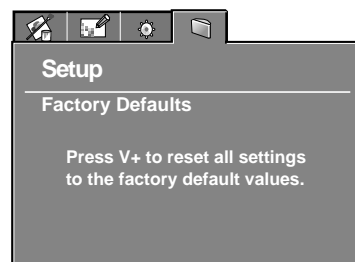
Displays a series of five test patterns, useful for the installation of the projector.

Press **UP** and **DOWN arrow** key to browse pattern.



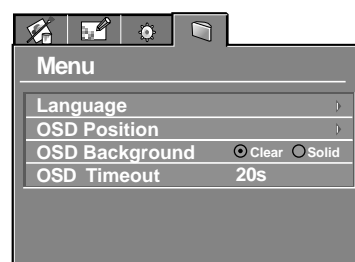
### 13.3.5 FACTORY DEFAULTS

Reconfigures the projector to original factory settings: Front Projection with 0% keystone and normal format.



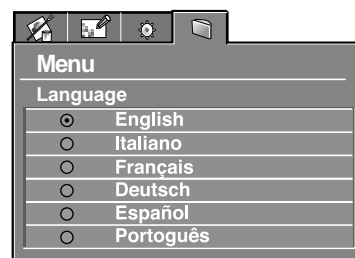
## 13.4 MENU

This menu covers the On Screen Display adjustments.



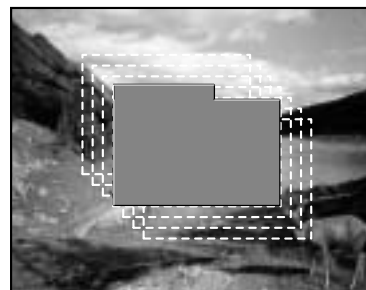
### 13.4.1 LANGUAGE

Lists the languages options available for the On Screen Display menus.



### 13.4.2 OSD POSITION

To position the On Screen Display within the picture area, by using the arrow keys.



### 13.4.3 OSD BACKGROUND

Gives a choice of backgrounds for the On Screen Display.

### 13.4.4 OSD TIMEOUT

Use this adjustment to set the display time after which the On Screen Display will disappear.

**LEFT** and **RIGHT arrow** keys set the timing (within a 5-50 second timeframe).



## 14 INFO

This function displays the current status of the projector, input type, input frequency, etc.



Displays the selected input's information and the projector status

Info	
Input	Video
Video Standard	PAL M
Video Type	Normal
Orientation	Floor
Aspect	Normal
Color Temperature	Low
Lamp Hour Meter	352
Software Version	07.00

VIDEO

Info	
Input	Graphics RGB
Horz. Frequency	56.5 kHz
Vert. Frequency	70 Hz
Resolution	1024 x 768
Orientation	Floor
Aspect	Normal
Color Temperature	Low
Lamp Hour Meter	352
Software Version	07.00

RGB

by the projector during the power on sequence (red flashing LED).

The Remote Control and the keyboard pad on the projector can select the inputs available on the Remote Input Interface. The **0** key allows switching between the list of projector's inputs and the list of Remote Input Interface.



**If a single signal is applied to the projector and that source was selected, the image coming from that input will be projected.**

**If signals are applied to several inputs, you can select the desired input by one of the following methods:**

- browsing the Source Selection menu, by remote control or rear key pad
- pressing the remote control's digit key corresponding to the desired input

## 16 CLEANING AND MAINTENANCE

The projector does not require internal cleaning. There are no user serviceable parts inside the projector. Please refer all service requirements to qualified personnel.

### Cleaning the projector's cover:

Use a soft slightly damp cloth. Do not use abrasive cleaners, solvents or other harsh chemicals, as this will damage the finish of the cover. Avoid direct cleaning of the rear panel's screen-printing (Fig. 48).

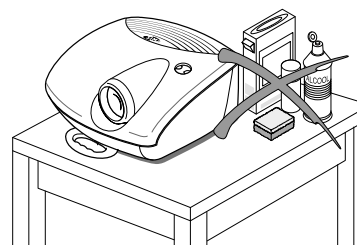


Fig. 48

### Cleaning the lens:

The lens may be cleaned with a very soft, non-abrasive small brush, in order to remove dust particles. Alternatively, use a soft dry cleaning cloth (of the type used for camera lens cleaning) to remove fingerprints and grease marks.

The projector's lens system is completely sealed; internal cleaning is not needed.

## 15 INPUT SELECTION

The Input Selection menu is recalled by pressing the key: **0/AV** of the remote control. During normal display, press **UP arrow** key and **DOWN arrow** key of the keyboard pad. The input selected will be highlighted in yellow.

### 15.1 PROJECTOR INPUTS

This menu allows access to the available inputs, at the rear of the projector.

Use **UP** and **DOWN arrow** keys to browse inputs.

**RIGHT arrow** to select input.

**LEFT arrow** key to auto select the appropriate input.

Alternatively, use the remote control to directly select the required input (**1 to 7**).



Input selection menu

Source Selection	
1	Video
2	S-Video
3	RGBS 15 kHz
4	YCrCb 15 kHz
5	RGBS 32 kHz
6	YCrCb 32 kHz
7	Graphics RGB
0	RI2 inputs

### 15.2 REMOTE INPUTS (RI2)

Source Selection / RI2	
1	Video 1
2	Video 2
3	S-Video 1
4	S-Video 2
5	RGBS 15 kHz
6	YCrCb 15 kHz
7	RGBS 32 kHz
8	YCrCb 32 kHz
9	Graphics RGB
0	Projector Inputs

This menu lists the available inputs on the Remote Input Interface (RI2). The interface is automatically recognised

## 17 TROUBLESHOOTING GUIDE

### Problems

#### No power:

Green and red LED are OFF

#### The lamp is not coming on:

#### No image:

#### Image is disturbed, unstable or noisy:

### Solutions

- Check the power switch at the rear: it must be in position I.
  - Check if the power cable has been connected correctly to a working socket.
  - Check the power socket fuse, at the rear of the projector.
  - Replace the fuse on the mains socket with an identical type (T 3.15A H) (*Fig. 8*).
  - Should the problem persist, seek authorised technical assistance.
- 
- Allow a few minutes pause between switching off and turning on again (from stand-by). This will allow the lamp to cool down sufficiently.
  - If the lamp doesn't come on – even though the projector has had sufficient time to cool down – seek technical assistance from your nearest Dealer.
- 
- Check that the selected input is actually connected to a active video or graphic signal.
  - Check that the above source actually works.
  - Verify compatibility of video/graphic signals with the technical specifications of the projector.
  - Check the integrity of cables used to connect various sources.
  - If you are using the Remote Input Interface, do not to confuse the menu for selection of projector's inputs (**Source Selection**), with the menu for selection of remote inputs (**Source Selection / RI2**).
- 
- Verify compatibility of video/graphic signals with the technical specifications of the projector.
  - Check the integrity of cables connecting projector to various sources.
  - If the signal source is a terrestrial broadcast (via a VCR) check that the receiving channel has been correctly tuned in and that the aerial system is in good working order.
  - Should the problem be present with a signal coming from a video-recorder, ensure that the videotape is an Original "first generation" copy and in good condition.
  - Adjust the **VCR**'s tracking control for optimum picture performance. Ensure the **VCR** mode is active in the **Picture** menu.

#### Incomplete image along borders (vertical and horizontal):

- Compare compatibility of video/graphic signals and technical specifications of your projector.
- Press **Auto** (on your remote or key-pad) to execute automatic adjustments.
- Adjust the horizontal and vertical position of projected image by selecting **Position** on the **Image Adjustments** menu.
- Adjust the width and height of image, selecting **Aspect** in the **Image Adjustments** menu.

#### Image too dark, too pale or unnaturally coloured:

- Verify compatibility of video/graphic signals with technical specifications of your projector.
- Go to **Picture** menu, select and regulate any of the following, accordingly: **Contrast**, **Brightness**, **Color**, and **Tint**.
- If necessary, reset the **Color Temperature** and **Gamma Correction** (found on the **Image Adjustments** menu / **Advanced Settings** menu).

#### Graphic image with poor quality vertical detail:

- Verify compatibility of video/graphic signals with technical specifications of your projector.
- Press **Auto** (on your remote or key-pad) to execute automatic adjustments.
- Adjust **Frequency** and **Phase** parameters, found in the **Image Adjustments** menu, to optimise vertical detail of the projected image.

#### Video Image showing colour misalignment on vertical details:

- Verify compatibility of video/graphic signals with technical specifications of your projector.
- Adjust **Y/C Delay** settings in the **Image Adjustments** / **Advanced Settings** to reduce colour misalignment. For best results use an external colour bar test pattern source.

#### Remote control does not work:

- Check the batteries and for correct polarity.
- Ensure that the area between the infrared sensor (front of projector) and the remote control is free of obstruction.
- Ensure that infrared sensors (front and rear of projector) are not exposed to intense light levels.

## 18 MESSAGES

The following messages could appear on your screen:

### No Signal.

The projector does not recognise any signal sent through the selected input

- Check that the selected input is actually connected to a video or graphic signal.
- Verify compatibility of video/graphic signals with technical specifications of your projector.
- Check the integrity of cables used to connect various sources.
- If you are using the Remote Input Interface, do not to confuse the menu for selection of projector's inputs (**Source Selection**), with the menu for selection of remote inputs (**Source Selection / RI2**).

### High temperature:

The projector detects temperature internally; if it is too high it will switch itself off.

- Check temperature of the room: it must be below 35°C (95°F)
- Check projector air vents on top and underneath the projector: they must be free of obstruction.
- If the problem persists, consult your Dealer.

## 19 OPTIONAL ACCESSORIES

You can purchase the following optional accessories at your Dealer:

Remote Input Interface with 10 m Cable.  
Wall/Ceiling Bracket Kit.



**CAUTION:** *for ceiling/wall installation, by means of suspension bracket, carefully follow the instructions and safety instructions recommended by the Manufacturer in the bracket's literature.*

Use only original, or  **Multimedia** approved, accessories.

## 20 COMPATIBILITY

### • Safety regulations

EN 60950	Information Technology apparatus including electrical apparatus for office use.
UL 1950	Standards for Safety of Information Technology Equipment

### • Electromagnetic Compatibility Regulation:

EN 55022	Information Technology apparatus. Radiointerference characteristics
EN 55024	Information technology equipment Immunity characteristics Limits and methods of measurement Class B

## 21 TECHNICAL SPECIFICATIONS

### OPTICAL CHARACTERISTICS

Projection system:	optical engine based on 1 DMD(TM) chip sealed housing, dusty proof
DMD panel:	HT 200 resolution SVGA (800 x 600 pixels) HT 250 resolution XGA (1024 x 768 pixels)
Brightness:	HT 200: 800 ANSI lumen HT 250: 900 ANSI lumen
Brightness uniformity:	> 95%
Contrast ratio:	> 300:1 (checker board) > 600:1 (full on / full off)
Projection lens:	zoom, 12 elements AR multilayer coating, motorized focus and zoom, manual elevation
Aperture f#:	2.7 (zoom min) - 3.3 (zoom max)
Picture size:	50-250 inches (diagonal measure)
Aspect ratio:	4:3, 16:9
Throw ratio:	2.2:1 - 3.0:1 (throw distance:picture width)
Focus range:	2.2 - 13 m
Screen size vs. Throw Distance:	60": min 2.6 m - max 3.6 m 80": min 3.5 m - max 4.8 m 100": min 4.5 m - max 6.1 m
Keystone adjustment:	up to 27° (optical: +/-10°, digital: +/-17°)
Lamp:	120 W UHP
Lamp life time:	6000 hours (average value measured in the laboratory under optimal conditions; it can be sensibly reduced by the unit misusing)

### ELECTRICAL CHARACTERISTICS

Input Signals:	CVBS on RCA/Phono type connector S-VHS on Mini-DIN connector RGBHV on DB15HD connector RGBS / YCrCb on RCA/Phono type connector 75 ohm Impedance
Horizontal frequency:	From 15 to 80 kHz (up to to UXGA format @ 60 Hz)
Vertical frequency:	48-100 Hz
Standard video:	PAL B, G, H, I, M, N, 60, SECAM, NTSC 3.58 and 4.43, automatic selection
High definition video:	ATSC HDTV (480p, 720p, 1080i)
Standard graphics:	VGA, SVGA, XGA, UXGA

De-interlacer:	SIM2 circuit with motion compensation and three different interpolation algorithms (9 points median filter / field repetition, line/field insertion)
Colour temperature:	Adjustable from 5600 to 9300 degrees K
Video processor:	DTI, CTI, comb filter, noise reduction. Sharpness, Y/C delay and NTSC tint adjustments
Remote control:	Via infrared remote control and via computer through RS232 serial interface
Remote inputs:	via Remote Inputs Interface (optional) and cable with "EVC" connector
Low Voltage Power Output:	Two 12 Vdc output, 100 mA max on jack connectors

## **GENERAL**

Supply:	From 100 to 240 Vac, - 10% + 6% tolerance
Frequency:	from 48 to 62 Hz
Consumption:	170 W max
Fuse:	T 3.15 A H, 5 x 20 mm
Dimensions of projector:	350 mm L x 167 mm H x 318 mm D
Weight of projector:	5,0 Kg
Packaging and gross weight:	400 mm L x 275 mm H x 405 mm D Double reinforced carton, expandable anti-shock packaging Gross weight, including accessories: 8 Kg Recyclable packaging material
Transportability:	the projector is to be considered "Desktop equipment"

## **TEMPERATURE AND HUMIDITY RANGES**

Operation temperature:	0 to +35°C
Transportation:	-10 to +55°C
Storage:	-10 to +55°C
Humidity:	10 to 99% non condensing

## **CERTIFICATIONS**

Free fall:	IEC 68-2-31, IEC 68-2-32 compliant
Safety:	EN 60950, UL 1950
Electromagnetic emissions:	EN 55022